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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

June 28, 2000

MEMORANDUM

SUBJECT: Explanation of Significant Differences
Chevron Chemical Company Site
Orlando, Florida

FROM: William C. Denman, P.E.
Remedial Project Manager
South Site Management Branch

TO: Richard D. Green, Director
Waste Management Division

The purpose of this memorandum is to present an Explanation of Significant Differences (ESD) for the Chevron Chemical Company Superfund Site located in Orlando, Florida, for your concurrence. The Record of Decision (ROD) for the Site was signed on May 22, 1996. The primary change being documented in this ESD is to change the cleanup standards for ethylbenzene and xylene from the secondary standards to the primary, health based standards.

When the ROD was written, it was thought that ethylbenzene and xylene may have been adding to the mobility in the groundwater of the BHC isomers in a phenomena known as cosolvency. It was thought that levels of ethylbenzene and xylene below the primary, health based standards may have been increasing the solubility of the BHC isomers, making them more mobile in the groundwater at the Site. Therefore, instead of specifying the primary standards as cleanup goals for the protection of human health, the ROD specified the more stringent, secondary standards as the cleanup standards for ethylbenzene and xylene to attempt to address any cosolvency issues. Secondary drinking water standards address undesirable properties of water such as color, odor, and amount of dissolved solids. These standards are not based on health threats but rather on the appearance or desirability of drinking water.

In February 2000, a report titled *"An Evaluation of the Effect of Xylene on Putative Lindane Cosolvency in Chevron Orlando, Florida Site Groundwater"*, documented the results of a study, funded by Chevron, to evaluate the effect of xylene on the mobility of lindane, a BHC isomer. This study, which was conducted with Site groundwater, found that concentrations of xylene as high as an order of magnitude above those present at the Site had no effect on lindane solubility. Therefore, the report concluded that xylene does not act as a cosolvent to increase the lindane solubility at the Site. This report was submitted to EPA and to the Florida Department of Environmental Protection. Both agencies concur with the conclusions of the report.

The changes to the ROD documented in this ESD are considered to be protective of human health and the environment, comply with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, are cost effective, and use permanent solutions to the maximum extent practicable for this Site. All other aspects of the May 22, 1996, ROD remedy remain unchanged at the time of issuance of this ESD. I recommend that you concur with this ESD so that it may be added to the Administrative Record. Attached is a copy of the fact sheet which will be distributed to the public. The fact sheet explains the changes to the remedy and the Agency's rationale for the changes. The fact sheet will also be placed in the Administrative Record upon your concurrence with the ESD.

Attachment

Concurrence Signature

6/29/00
Date

EXPLANATION OF SIGNIFICANT DIFFERENCES

CHEVRON CHEMICAL COMPANY
ORLANDO, ORANGE COUNTY, FLORIDA

Region 4 July 2000

Introduction

This Explanation of Significant Differences (ESD) for the Chevron Chemical Company Site in Orlando, Florida, has been prepared by the Region 4 Office of the United States Environmental Protection Agency (EPA). The purpose of this ESD is to document significant changes in the remedy selected in the Record of Decision (ROD) for the Site.

This ESD is being issued as part of EPA's public participation responsibilities under Section 117(c) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and Section 300.435(c)(2)(i) of the National Contingency Plan (NCP), 40 CFR Part 300.

The Administrative Record contains documents used as the basis for remedy selection at the site, including the ROD and Responsiveness Summary. This ESD will become part of the Administrative Record in accordance with Section 300.825(a)(2) of the National Contingency Plan. The Administrative Record documents are available for public review and copying in the Chevron Chemical Company Site information repository located at the following address:

Orlando Public Library
Edgewater Branch
6250 Edgewater Drive
Orlando, Florida 32810
(407) 295-3613

Site Background

The Chevron Orlando site is located at 3100 North Orange Blossom Trail (Highway 441) in Orlando, Florida. At this location, the Chevron Chemical Company operated a pesticide formulation plant between 1950 and 1976. The facility received unblended products in bulk liquid and powder form and blended the products to make pesticides and nutritional sprays for bulk wholesale distribution. Chevron Chemical operated at this location until 1976.

In 1978, the property was sold and Central Florida Mack Trucks, a truck sales and service company, began operations at the Site. Central Florida Mack Trucks repaired and serviced diesel engine trucks at the Site until November 1986.

From 1982 until 1989, several investigations were conducted to assess the conditions at the site. The results of these studies indicated the presence of pesticides, volatile organic compounds (VOCs), and metals in the soil and/or groundwater.

In 1990 EPA and Chevron signed an Administrative Order on Consent (AOC) to further assess the Site and conduct a removal action. The removal action focused on the removal of material which could be a source of groundwater contamination or a risk to human health. This included the soil in the rinsate pond area, along the railroad spur, and soil adjacent to the historic aboveground storage tank area.

The Agency for Toxic Substances and Disease Registry (ATSDR) defined the removal action goals and cleanup levels for the soils on site to be protective of human health via the inhalation and dermal contact routes of exposure. The ATSDR goals required removal of shallow soils (0- to 1-foot below land surface) with chlorinated pesticide concentrations in excess of 50 milligrams per kilogram (mg/kg), and removal of deeper soils (1-foot to the water table) with chlorinated pesticide concentrations in excess of 100 mg/kg. ATSDR recommended the use of chlordane as an indicator chemical because chlordane was considered the most prevalent and most toxic compound to humans and was found in the highest concentrations.

The removal action was conducted from December 1991 through September 1992. All site structures were demolished and removed. Approximately 17,780 tons of pesticide contaminated soil were excavated and sent off-site for disposal; 4,900 tons of petroleum contaminated soil were excavated and treated; and 126,000 gallons of recovered stormwater and groundwater were treated and discharged into an on site infiltration trench. All of the excavated areas were backfilled with clean soil and the site was graded and seeded.

In April 1993, Chevron and EPA entered into another AOC to conduct a remedial investigation and feasibility study (RI/FS) to evaluate groundwater contamination at the Site and potential soil contamination in the adjacent trailer park and areas of off-site drainage.

Soil sampling was conducted in two phases at the Armstrong Trailer Park. Based on the results of th sampling, a removal action was conducted at the trailer park during March and April 1994. The soil cleanup level for this removal was 4.9 ppm of chlordane. Approximately 230 tons of contaminated soil were excavated from the trailer park.

Groundwater sampling was also conducted in phases during the RI. Nine existing monitoring wells were sampled in April 1993. Seventeen additional wells were installed and subsequently sampled during September and October 1993.

Selected Remedy

On May 22, 1996, EPA signed a Record of Decision (ROD) for the Site. The ROD describes the contamination at the Site and the selected cleanup method for the Site. A public meeting and thirty day public comment period were held prior to finalizing the ROD. EPA responded to all substantive public comments in a Responsiveness Summary at the end of the ROD. The selected remedy includes:

- Monitored natural attenuation of the groundwater until the cleanup levels are achieved.
- A contingency plan that includes the installation of a subsurface filter wall if natural attenuation does not continue as expected. Additional enhancements, such as limited air sparging, hydraulic gradient control, or source removal to be implemented if necessary.
- Institutional controls in the form of deed restrictions to limit use of the groundwater.

Explanation of Significant Differences

The purpose of this ESD is to document significant changes in the remedy selected in the ROD for the Site. The primary change being documented in this ESD is in regard to the groundwater cleanup standards for ethylbenzene and xylene.

When the ROD was written, it was thought that ethylbenzene and xylene may have been adding to the mobility in the groundwater of the BHC isomers in a phenomena known as cosolvency. It was thought that levels of ethylbenzene and xylene below the primary, health based standards may have been increasing the solubility of the BHC isomers, making them more mobile in the groundwater at the Site. Therefore, instead of specifying the primary standards as cleanup goals for the protection of human health, the ROD specified the more stringent, secondary standards as the cleanup standards for ethylbenzene and xylene to attempt to address any cosolvency issues. Secondary drinking water standards address undesirable properties of water such as color, odor, and amount of dissolved solids. These standards are not based on health threats but rather on the appearance or desirability of drinking water.

In February 2000, a report titled "*An Evaluation of the Effect of Xylene on Putative Lindane Cosolvency in Chevron Orlando, Florida Site Groundwater*", documented the results of a study funded by Chevron to evaluate the effect of xylene on the mobility of lindane, a BHC isomer. In this study, which was conducted with groundwater actually taken from the Site, it was found that concentrations of xylene as high as an order of magnitude above those present at the Site had no effect on lindane solubility. Therefore, the report concluded that xylene does not act as a cosolvent to increase the lindane solubility at the Site. This report was submitted to EPA and to the Florida Department of Environmental Protection (FDEP). Recognizing that the results are site specific and subject to the limitation of the testing protocol, both agencies concur with the conclusions of the report.

Therefore, requiring secondary standards as cleanup standards for ethylbenzene and xylene is no longer deemed appropriate at the Chevron Site. The appropriate cleanup standards are the primary cleanup standards which were developed for the protection of human health.

This ESD changes the cleanup standards specified in the ROD for ethylbenzene from the secondary standard of 30 ug/l to the primary standard of 700 ug/l and the cleanup standard for xylene from the secondary standard of 20 ug/l to the primary standard of 10,000 ug/l. All other cleanup standards specified in the ROD for the Site remain unchanged.

Statutory Determination

The changes to the ROD documented in this ESD are considered to be protective of human health and the environment, comply with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, are cost effective, and use permanent solutions to the maximum extent practicable for this Site.

Next Steps

Groundwater sampling will continue in order to monitor the progress of natural attenuation until the cleanup standards are reached.

Who Can You Call For Answers?

If you have a question about activities on the Site, please call Bill Denman, the EPA project manager. He can be reached at (800)435-9234 or via email at *denman.bill@epa.gov.*

United States
Environmental Protection
Agency

South Site
Management Branch

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Bill Denman
Remedial Project Manager

INSIDE:
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FACT SHEET